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09/582,351 08/11/00 NAKAYAMA

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MM91/0523

EXAMINER

CHU, C

ART UNIT

PAPER NUMBER

2815

DATE MAILED:

05/23/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/582,351

Applicant(s)

NAKAYAMA, TOSHIYUKI

Examiner

Chris C. Chu

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## DETAILED ACTION

### *Specification*

1. The specification does not include reference signs "132" of Figure 9 (see CFR § 1.84p).

Correction is required.

2. The disclosure is objected to because of the following informalities: the reference number "12" should be --14-- on page 12, lines 15 of the specification.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto.

Note Fig. 14 of Hashimoto, where the reference shows a semiconductor device comprising: a semiconductor chip (15) having a plurality of electrodes (21); a substrate (10) on which is formed a plurality of leads (54); and an adhesive (23c) provided between a surface of the semiconductor chip (15) on which the electrodes are formed and a surface of the substrate

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(10) on which said leads are formed, and adhering the semiconductor chip and the substrate (see Fig. 14), wherein at least one of the plurality of electrodes (21) and at least one of the plurality of leads (54) are electrically connected; and wherein on the substrate in a region including at least a part of a region opposing the semiconductor chip, a film (90b in Fig. 13) is formed with a lower adhesion to the adhesive (23c) than a base material of the substrate.

5. Claims 1, 2, 6 ~ 13 and 15 ~ 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Yama et al.

Regarding claim 1, the method steps are disclosed by Yama et al. for the same reasons provided below paragraph, the device claim 12.

Regarding claim 12, Fig. 16 of Yama et al., where the reference shows a semiconductor device comprising: a semiconductor chip (1) having a plurality of electrodes (2 and 16); a substrate (3) on which is formed a plurality of leads (7); and an adhesive (19) provided between a surface of the semiconductor chip (1) on which the electrodes are formed and a surface of the substrate (3) on which said leads are formed, and adhering the semiconductor chip and the substrate (see Fig. 16), wherein at least one of the plurality of electrodes (2 and 16) and at least one of the plurality of leads (7) are electrically connected; and wherein on the substrate in a region including at least a part of a region opposing the semiconductor chip, a film (5 and 17) is formed with a lower adhesion to the adhesive (19) than a base material of the substrate.

Regarding claims 2 and 13, Yama et al. discloses the adhesive is formed of an anisotropic conductive material having conductive particles dispersed in an insulating material (column 14, lines 33 ~34).

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(Regarding claim 14, Yama et al. discloses the leads and the film are formed of the same electrically conductive material.)

Regarding claims 6 and 15, Fig. 16 of Yama et al., where the reference shows the electrodes (2 and 16) are provided at an extremity of the surface of the semiconductor chip (1); and the film (5 and 17) is formed in a region opposing a central part of the surface of the semiconductor chip.

Regarding claims 7 and 16, Fig. 16 of Yama et al., where the reference shows the film (5 and 17) is formed to spread two-dimensionally, with at least one opening exposing a surface of the substrate.

Regarding claims 8 and 17, Fig. 16 of Yama et al., where the reference shows the film (5 and 17) is formed to project outside a region in which the semiconductor chip is adhered.

Regarding claims 9 and 18, Fig. 16 of Yama et al., where the reference shows the film (5 and 17) is formed to be symmetrical about a center point of a region in which the semiconductor chip is adhered.

Regarding claims 10 and 19, Fig. 16 of Yama et al., where the reference shows the film (5 and 17) is formed to avoid at least one of the leads (7).

Regarding claims 11 and 20, Fig. 16 of Yama et al., where the reference shows a part of the film (5 and 17) is formed in a position overlying the electrodes.

Regarding claims 21 and 22, these claims merely recite the intended use or the environment in which the semiconductor device of claim 12 is intended to be used. Since the claims fail to define any additional structure, thus, Yama et al. anticipates these claims as well.

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***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3 ~ 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yama et al. in view of JP-A-10-112475.

Yama et al. discloses the claimed invention except that etching from one conductive foil, which adhered to the substrate, forms the leads and the film. However, JP-A-10-112475 shows that etching from one conductive foil, which is adhered to the substrate, forms the leads and the film (see Fig. 2). Thus, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to modify Yama et al. by etching a conductive foil to form the leads and the film as taught by JP-A-10-112475. The ordinary artisan would have been motivated to modify Yama et al. in the manner described above for at least the purpose of decreasing manufacture steps.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oda discloses a semiconductor device.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Chris C. Chu  
Examiner  
Art Unit 2815

c.c.  
May 18, 2001



**EDDIE LEE**  
**SUPERVISORY PATENT EXAMINER**  
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